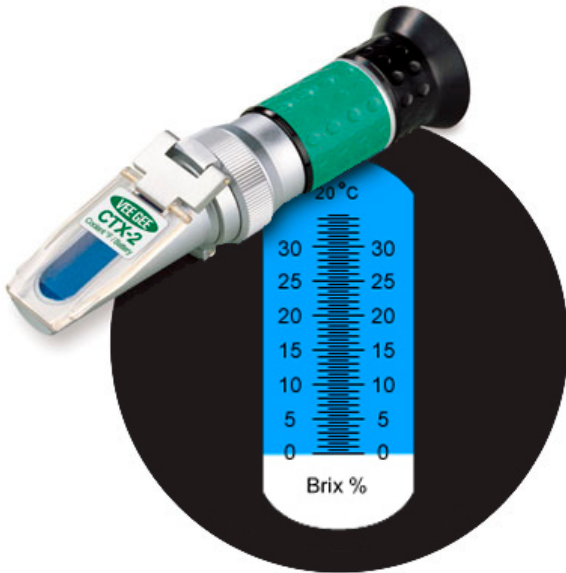


Refractometer

also known as a Brix Meter



A single invaluable tool that can be used to evaluate the best foods for consumption or used in gardening/farming - to predict yield, quality, pest and disease pressure and stress resistance.

Key Features

- This handheld refractometer measures brix levels from 0-32 (Brix is named after an early researcher in the field, Professor A.F.W. Brix, who assessed the density of plant juices and their relationship to healthy produce)
- This meter has an automatic temperature compensation feature (ATC)
- Pocket-sized and lightweight; easy to carry
- Great device to take with you to the grocery store or farmer's market to test produce **before** you buy (your goal is to consume fruits and vegetables that have a brix level of at least 12; typically, brix levels below 12 signify inferior produce.)

The refractometer is an indispensable tool for selecting the best foods to eat (whether they are labeled organic or not). With this simple, robust instrument, all you need is just a couple of drops of juice or sap of a plant (i.e. vegetable, fruit, etc.) to provide valuable data for finding the best foods to consume. It is also an invaluable tool for use in home gardening or farming for plant and crop management.

The refractometer measures brix levels, (which are a measure of plant sugars, mineral and vitamin content), protein levels and TDS (Total Dissolved Solids).

The link between high brix levels and inherent pest and disease resistance has been conclusively established. Conversely, low brix levels are equated with poorly grown crops, poor mineralization and nutriture.

Good brix levels (generally above 12) also ensure improved taste, longer shelf-life and better yields. High brix levels indicate good phosphorus levels in a plant, and a blurry dividing line on the brix reading scale can indicate food calcium levels in a plant.



Using the refractometer to test the quality of an apple

Mode of Action

The solids bend the light as it passes through the sample that is placed on the viewing plate. The amount of bend or degree of rotation due to the sample relates to the reading on the scale seen through the eyepiece.

Generally, plant sap levels above 8 are good and 12 excellent. Some commentators have theorized that there is no conclusive upper limit as, year after year, some growers have found that their brix levels can continue to increase.

Calibration

1. Rinse the glass surface and plastic cover flap with distilled or de-ionized water and wipe dry.
2. Place a few drops of distilled or de-ionized water on the glass surface and lower the plastic flap to flatten the water sample evenly over the viewing glass.
3. Look through the eyepiece and rotate the eyepiece to focus the viewing scale.
4. A horizontal line will be visible and should intersect with zero on the viewing scale.
5. If the line passes through the zero, then the unit is measuring zero and is calibrated and ready for use.
6. If the line does not run through the zero, then the plastic cover on the tuning screw should be removed (located on the top of the unit) and the adjusting screw turned either clockwise or anticlockwise to either lift or lower the horizontal line as required using the provided screwdriver. The tuning process is synonymous with zeroing a rifle scope. If the line does not run through the zero, then the plastic cover on the tuning screw should be removed (located on the top of the unit) and the adjusting screw turned either clockwise or anticlockwise to either lift or lower the horizontal line.

Points to Note

- Ideally a historical record should be developed over time by each user to help determine possible environmental influences, acceptable brix fluctuations and ideal upper levels in their particular situation. This also applies to those determining whether a fruit or vegetable is tasty.
 - Generally, brix readings tend to drop with low atmospheric pressure (eg. the onset of a storm).
 - Relying on published brix readings as guidelines can be problematic as often it is not stated whether the readings are derived from the plant sap or fruit juice (fruit juice readings tend to be much higher).
 - Clean the glass surface and plastic cover before and after every use with distilled water.
 - Store the unit in its case to prevent dust entering to focal tube.
 - This tool should never be dropped and should always be stored within the shock absorbent case when not in use.
 - Calibrate at least monthly to ensure the unit is “zeroed”.
 - Ensure the unit is washed with de-ionized water and wiped dry between samples and after use.
 - Brix readings before and after a fertilizer application can help determine the suitability of different inputs, eg. if the brix rises (after 1-24 hours after application) then it can be considered suitable; if it stays the same or reduces, it would be considered not suitable at that time.
- Measuring the brix of a plant's sap gives an **immediate overview of the general health of a plant or crop** at any stage of production.
 - Measuring the brix of a fruit's or vegetable's juice can **indicate the taste and potential shelf life of the produce after harvest**. (i.e. low brix means poor taste and poor shelf life; high brix means good taste and longer shelf life)
 - It has been widely assumed that **calcium and phosphate** are the key elements determining brix levels. However, recent research suggests that **potassium** can also play an important role.
 - If in the garden or field, always measure brix at the same time of day, as readings may differ. For example, at midday, plant sap tends to be concentrated (due to evaporation) and brix readings will generally read higher.
 - For home gardens/crops, brix readings may fluctuate after applications of fertilizers, chemicals and irrigation

Using a Refractometer

(also known as a Brix Meter)

to test the quality of fruits and vegetables

*You cannot buy -- or grow -- good food
until you can first identify what good food is.*

“Perhaps you should eat more fresh fruits and vegetables,” said the doctor...

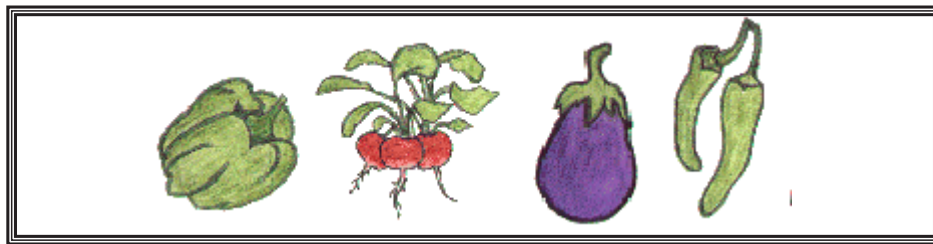
...and the dentist...
...and the chiropractor...
...and the acupuncturist...
...and the nutritionist...
...and the naturopath...
...and the ophthalmologist...
....and many more...

“But they don’t taste good,” said the children...

...and your spouse...
...and your friends...
...and YOU!

Well, that’s because the food isn’t that good. So, what could the answer be?

The answer is to identify and purchase the higher quality food your body is craving -- it tastes better.
If you’re a grower, the answer is to GROW better food -- for you, your spouse, your children,
your animals and even your neighbors.



**ARE THESE VEGGIES JUNK, SO-SO, OR SUPERIOR??
THAT TRULY IS THE QUESTION**

*It’s time to abandon toxic-chemical farming paradigm or what many call “debased” agriculture.
Our job is to empower you with the ability to make wise choices about the very substances of
life that you and your family consume every day.*

Real food is grown on rich and fertile soil. Removing crop after crop, year after year (without naturally fertilizing the soil or resting the soil), rapidly depletes the soil's nutrition. Simplistic replacement of the NPK (NPK = nitrogen, phosphorous, potassium) does NOT replenish the soil and only leads to the nutrient worn-out produce stacked high on supermarket shelves. On the other hand, balancing the soil--- fully mineralizing it to an ideal state --- allows the production of fruits and vegetables of superb flavor and taste --- fit for royalty: that means YOU and your family.

Many farmers do know how to grow quality produce. When you demand and buy only the very best produce – it helps them to continue to provide true quality produce.

Using a refractometer can help lead you to the topnotch growers already doing the best job. On the other hand, countless consumers armed with this wonderful tool and who start saying, “I don’t want your sad, nutritionless produce” will start to wake up supermarkets and their pitiful quality products. Consumer demand will help produce managers wake up and stop purchasing from the majority of farmers who are still engaged in toxic chemical farming.

True Quality: this, indeed, is the needed revolution in Agriculture.

Does your neighbor spray his garden with pesticides? The mystery of a bug-proof garden with scrumptious fruits and vegetables has already been revealed. It's so simple: when the brix is low, the taste is poor and the insects are automatically attracted to your garden.

When the brix is high, the taste of the produce is superb and the insects automatically stay away – no pesticides needed!

So the gardener's real job is simply to remineralize and naturally fertilize in such a way that the plants, properly an superbly fed, can develop higher brix (which always translates to HIGH quality).



Using a refractometer to test the quality of an apple.

“Can you believe that you can take pretty much identical-looking hay from neighboring fields, feed 50 pounds a day from one field to a cow and have her drop in milk production and get sick, and feed half as much from the other field and have the cow rise in production and be healthy?

What is the difference between the two samples of hay? QUALITY!”

--- *Dr. Harold Willis “How To Grow Great Alfalfa”*

Did you understand the importance of **only** putting high-quality fruits and vegetables into your body?

It is so obvious that conventional farmers should **not use toxic chemicals** to rescue crops that are obviously sick -- and then sell them to you. However, so much of their education comes from the agriculture schools that are supported by chemical company grants. On the other hand, too often organic growers substitute dangerous organic insect controls for the synthetic poisons. Very few people seem to understand what the word “high quality” truly means.

What is “PAGE”? (Poor, Average, Good, Excellent)

Testing of Fruits and Vegetables for Real Quality by using a simple tool, the hand refractometer

Is it possible for humans to be strong, healthy, and have clear thinking if they are fed poor or average quality fruits and vegetables? Of course not. Nor should we expect everyone to follow extreme dietary regimens to be healthy -- without addressing “quality” -- then we can only expect poor results somewhere down the road.

Many reference books purport to show mineral and vitamin content of various foods. It is shocking to think that this information consists of **average values** collected by writers from sources such as the United States Department of Agriculture or various universities.

However, in the real world, farmers simply cannot work to “tables.” There is little room for guessing. Their livelihood depends on knowing exactly what values are in the products they produce, buy, or sell.

How strange it is that we base the nutrition for ourselves and our children on charts and tables that many researchers scorn.

The USDA performs some tests, but often uses results from approved private food laboratories across the USA. Sadly, the USDA is mainly concerned with **size, color, and appearance** grading standards. They must walk a political tight-rope for as surely as they would admit that **some** produce is of high quality, they would be simultaneously confessing that **most** farm produce is of low quality.

The only agreement is that HIGH QUALITY varies tremendously. Some authors claim that the best quality fruits and vegetables **have up to 1,000 times (*times, not percent*) more vitamins and minerals than other fruits and vegetables** that pass the same USDA size, color and appearance standards.

Regarding “average values,” if YOU start testing your own food, YOU will soon be **unpleasantly** surprised about what is considered to be “AVERAGE”. This “average” produce, you will find, is really far **BELOW average**.

- Children who have a poor response to so-called “average” food – but they will have a GOOD response to GOOD food because IT TASTES SO GOOD.
Their response is even better to **Excellent FOOD**. “Excellent” is the taste that you perhaps fondly remember from your own childhood when, say, your uncle gave you a delectable apple or peach.
- By consistently testing produce, YOU can start moving away from so-called “AVERAGE” food (and much of it is really POOR food) and start finding growers or vendors who can deliver GOOD or EXCELLENT food.

Although you could send a food items to a food laboratory to testing, it is expensive. Once you own a refractometer, you can start testing every item you find – over and over again – with immediate results. This instant information allows you to buy more of what you really want and less of what you don’t.

YES, THERE IS A BETTER WAY

There is a simple process where YOU can test quality before you buy produce. There is a way to test a small sample of any given produce and then make a fully informed decision. Then YOU can decide if that produce is what YOU want to feed yourself or your family.

Confused?

Many people who are reading the words on these pages are going to begin to understand that most of what they have been taught about fruit and vegetable quality **is far from the truth**.

Many have wondered if the food they have bought (or grown) has really been the best available for themselves and their children.

Get out the brix meter (refractometer) and start testing for yourself.

BRIX TESTING IS INCREDIBLY SIMPLE

Reading the Result is Instantaneous!

- 1) Squeeze a drop.
- 2) Read the value on the screen
- 3) Check the chart to gauge its quality level (*poor, average, good, excellent*)

Yes, the testing is as easy. Fruit and vegetable QUALITY correlates to the amount of dissolved solids in plant sap (fresh juice). All you need are the right tools and you will seldom be fooled again when buying produce. Use our Charts to show the relation of total soluble solids (TSS) to true QUALITY. Your taste buds will prove the charts are TRUTHFUL. REPEAT: YOUR TASTE BUDS will show you the charts are accurate.

THE ORIGIN OF THE WORD “BRIX”

Professor A. F. W. Brix was a 19th century German chemist (1798 - 1890). He was the first to measure the density of plant juices by floating a hydrometer in them. The winemakers of Europe were concerned that they could not predict which of various grape juices would make the best wine. Being able to judge quality ahead of actual bottling was of immense importance in an industry where a bottle of the best wine might sell for hundreds of times more than a bottle of everyday wine.

Professor Brix was acclaimed to be a great hero when he discovered a way to evaluate the best wines. He was also honored by having the measuring process named after him.

- BRIX is a measure of the percent solids (TSS) in a given weight of plant juice
- BRIX is often expressed another way: BRIX equals the percentage of sucrose. However, the term, “sucrose” can vary widely. The BRIX is actually a summation of the pounds of sucrose, fructose, vitamins, minerals, amino acids, proteins, hormones, and other solids in 100 pounds of any particular plant juice
- BRIX varies directly with plant QUALITY. For instance, a poor, sour tasting grape from worn out land may test 8 or less BRIX. On the other hand, a full flavored, delicious grape, grown on rich, fertile soil may test 24 BRIX (or higher).

Sugar is only one of the components of brix. Also, other substances can falsely indicate “brix” readings, such as rubbing alcohol, whiskey, vinegar, or wine. Interestingly, cooking oil, molasses, syrup, and other thick liquids require a refractometer calibrated to read 30-90 brix. Honey is checked with a refractometer calibrated to measure the water within it instead of the solids in the water.

HAND REFRACTOMETERS

Professor Brix’s hydrometer worked, but it was cumbersome and required a tall graduate beaker of juice to actually conduct the measure. This was OK for the vineyard wine cellar, but a nuisance to the grower in the field who wished to squeeze perhaps a single growing grape to judge its potential quality. Table model refraction measuring devices date back to the 1600’s. By the 1920’s, rather bulky “hand” models were in use in many vineyards. Although complex in construction, today’s hand refractometer is now extremely easy and convenient to use.

A refractometer is an optical device that works by light passing through a liquid which then bends or refracts the light. Thicker (i.e. more dense) liquids refract more light. Solids dissolved in a liquid will exhibit a refractive index in direct relation to the amount of solids. A refractometer substitutes a calibrated prism and an etched screen for the liquid. Refraction is extremely exact – used even today for precise measurements by modern chemists.

Today’s hand refractometer looks like a small 5” or 6” long telescope, but with a prism at the end, opposite the viewfinder. A calibrated hand refractometer allows determination of a reading or degree of brix when a drop of juice is placed on the prism, then flattened onto the plate by a cover. These devices are simple, accurate, durable, and easily carried. A refractometer will last a lifetime if properly cared for.

The Mineral Giants: Dr. Northern and Dr. Reams

Carey A. Reams, D. Sc. (1904-1985) owned an agricultural consulting service in Orlando, Florida from the late 1920's to the late 1960's when he began teaching full time. Although servicing mainly the citrus industry, Dr. Reams provided high-level consulting for dozens of other crops.

Reams was deeply influenced by the work of **Dr. Charles Northern**, an Alabama physician who stridently protested against the mineral poor food that clogged commercial channels and markets. Northern entered history when his **powerful health-is-dependent-on-minerals research** (as recorded by Rex Beach in an article published in *Cosmopolitan*) was read into U.S. Senate testimony (the famous 1936 Senate Document No. 264). This was often quoted by salesmen of the time (and even today) trying to sell inorganic minerals to the public – not realizing that humans are designed to get their minerals from once-living, natural food sources, not inorganic sources.

From Rex Beach's article:

*"He [Northern] asked himself how foods could be used intelligently in the treatment of disease, when they differed so widely in content. The answer seemed to be that they could not be used intelligently. In establishing the fact that serious deficiencies existed [note: and this was in 1936!] and in searching out the reasons therefore, he made an extensive study of the soil. It was he who first voiced the surprising assertion that we **must make soil building the basis of food building** in order to accomplish human building.*

*"Bear in mind," says Dr. Northern, "that **minerals are vital to human metabolism and health** - and that no plant or animal can appropriate to itself any mineral which is not present in the soil upon which it feeds."*

"When I first made this statement I was ridiculed, for up to that time people had paid little attention to food deficiencies and even less to soil deficiencies. Men eminent in medicine denied there was any such thing as vegetables and fruits that did not contain sufficient minerals for human needs. Eminent agricultural authorities insisted that all soil contained all necessary minerals. They reasoned that plants take what they need, and that it is the function of the human body to appropriate what it requires. Failure to do so, they said was a symptom of disorder."

*"We know that **vitamins are complex chemical substances** which are indispensable to nutrition, and that each of them is of importance for the normal function of some special structure in the body. Dis-order and disease result from any vitamin deficiency."*

"It is not commonly realized, however, that vitamins control the body's appropriation of minerals, and in the absence of minerals they have no function to perform. Lacking vitamins, the system can make some use of minerals, but lacking minerals,

vitamins are useless."

"Neither does the layman realize that there may be a pronounced difference in both foods and soils - to him one vegetable, one glass of milk, or one egg is about the same as another.

"Dirt is dirt, too, and our layman assumes that by adding a little fertilizer to it, a satisfactory vegetable or fruit can be grown."

"The truth is that our foods vary enormously in value, and some of them aren't worth eating, as food. For example, vegetation grown in one part of the country may assay 1,100 parts, per billion, of iodine, as against 20 in that grown elsewhere. Processed milk has run anywhere from 362 parts, per million, of iodine and 127 of iron, down to nothing.

[Note: commercial milk tends to run about 10-11 brix, whereas the very best milk can run up to 20 brix]

Dying and Degeneration

Our nation is in danger of degenerating and dying out. To survive, we must feed our kids higher quality foods. For this to occur, every family must be able to identify good food vs. chemically grown junk.

Here's an example. Ask your dentist how many mouths he has seen that have properly developed dental arches. Our children are being fed food so poor in minerals that the average child's jaw cannot fully fill out – thus it has a crowded dental arch. This is why wisdom teeth have to be removed (ideally, all wisdom teeth should be kept for best health and long life).

Poor minerals in the diet is why so many children need braces. Take a look at the faces of the children you see on the street. The mouth is only a window into the body. Notice those thin faces with poorly formed mouth arches -- with crowded teeth trying to push past one another – and which are accompanied by fragile, low-density, bones. Our race is in danger of degenerating – and is in the process. The answer is real quality, highly nourishing food. It is vital for us to survive.

*Please see Dr. Weston Price's book **Nutrition and Physical Degeneration**. It is a priceless classic about the proven link between health or degeneration and diet.*

"Some of our lands, even in a virgin state, never were well balanced in mineral content, and unhappily for us, we have been systematically robbing the poor soils and the good soils alike of the very substance most necessary to health, growth, long life, and resistance to disease. Up to the time I began experimenting, almost nothing had been done to make good the theft.

"The more I studied nutritional problems and the effects of mineral deficiencies upon disease, the more plainly I saw that here lay the most direct approach to better health, and the more important it became in my mind to find a method

of restoring those missing minerals to our foods.

“The subject interested me so profoundly that I retired from active medical practice and for a good many years now I have devoted myself to it.”

The results obtained by Dr. Northern were outstanding. By putting back into foods the stuff that foods are made of, he has proved himself to be a real miracle man of medicine, for he has opened up the superior and most rational route to better health.

- He showed that it could be done.
- He doubled, then redoubled the natural mineral content of fruits and vegetables.
- He improved the quality of milk by increasing its mineral content, especially iron and the iodine.
- He helped hens to lay eggs richer in the vital elements.
- By scientific soil feeding, he raised better seed potatoes in Maine, better grapes in California, better oranges in Florida and better field crops in other states.

Just what is involved in this matter of “mineral deficiencies”? What does it mean to your health, and how does it affect the growth and development, both mental and physical, of your children?

We know that rats, guinea pigs, and other animals will suffer a diseased condition and can become healthy again by controlling the mineral content in their food.

The Rat Experiments. A 10-year test with rats proved that by withholding calcium they can be bred down to a third the size of those fed with an adequate amount of that mineral. Their intelligence, too, can be controlled by mineral feeding as readily as can their size, their bony structure, and their general health.

If you place these little animals inside a maze after starving some of them in a certain mineral element, the starved ones will be unable to find their way out, whereas the well-fed group will have little or no difficulty in getting out. Their emotional dispositions can be altered by mineral feeding. They can be made quarrelsome and belligerent; they may even turn into cannibals and devour each other.

A cageful of normal rats will live in peace. If you restrict their calcium, they become irritable and begin to draw apart from one another. Then they will begin to fight. If you restore their calcium balance, they will grow more friendly again; in time, we will find them sleeping peacefully together in a pile as before.

Key Minerals. Research agrees that a **minimum of 16 mineral elements** are indispensable for normal healthy nutrition; several more are always found in small amounts in the body, although their precise physiological role is disputed. Of the

11 indispensable minerals, **calcium, phosphorus, and iron** are especially critical.

Calcium is the dominant nerve controller. It powerfully affects the cell formation of all living things and regulates nerve action. It governs contractility of the muscles and the rhythmic beat of the heart. It also coordinates the other mineral elements and corrects disturbances made by them. It works only in sunlight. Vitamin D is its buddy.

Starving for Calcium. Dr. Harold C. Sherman of Columbia University has pointed out that at least **50% of Americans are starving for calcium.** A recent article in the *Journal of the American Medical Association*, stated that out of **4,000 cases in New York Hospital, only 2 were not suffering from a lack of calcium.**

What does a calcium deficiency mean? Many degenerative conditions and diseases can result from calcium deficiency. Included in the list are rickets, bony deformities, decayed teeth, nervous disorders, reduced resistance to other diseases, fatigue, and behavior disturbances such as aggressiveness and nonadaptability.

An example: The soil around a certain Midwest city is poor in calcium. Three hundred children of this community were examined and nearly 90% had bad teeth, 69% showed affections of the nose and throat, swollen glands, enlarged or diseased tonsils. More than one-third had defective vision, round shoulders, bowlegs, and anemia.

A child requires as much calcium and phosphorus per day as two grown men, but studies indicate a common deficiency of both in our food. Researchers on farm animals point to a deficiency of calcium and phosphorus as the cause of serious losses to the farmers. When the soil is poor in phosphorus these animals become bone-chewers. Researchers have found when there are enough phosphates in the blood there can be no dental decay.

Another Example. Iron is an essential constituent of the oxygen-carrying pigment of the blood: iron starvation results in anemia, and yet iron cannot be assimilated unless some copper is contained in the diet. In Florida many cattle die from an obscure disease called “salt sickness.” It has been found to arise from a lack of sufficient iron and copper in the soil, and hence in the grass. A man may starve for want of these elements just as a cow starves.

We are starving for these precious, life-giving minerals. We must rebuild our soils. Therein lies the short cut to better health and longer life.

Dr. Northern’s Fight. When Dr. Northern first asserted that many foods were lacking in mineral content and that this deficiency was due solely to an absence of those elements in the soil, his findings were challenged and ridiculed. He was called a crank. But differences of opinion in the medical pro-

fession are not uncommon. It was only 60 years ago that the Medical Society of Boston passed a resolution condemning the use of bathtubs! Dr. Northern persisted in his assertion that since foods did not contain proper nutrients, no physician could with certainty prescribe a diet to overcome physical ills.

Textbook Folly. He showed that the textbooks are not dependable because many of the analyses printed in them were made many years ago, whereas in his day, the soils had already become depleted. Soil analyses, he pointed out, reflect only the content of samples. One soil analysis may be entirely different from another sample taken only 10 miles away.

Dr. Northern decided to do something about it. By reestablishing a proper soil balance, he grew crops and proved that they contained ample amounts of minerals and vitamins.

People of his day were astonished. It was contrary to the books and research. Dr. Northern also proved that crops grown in a properly mineralized soil were **bigger and better**; that **seeds germinated quicker**, grew more rapidly and made **larger plants**; that trees were healthier and had **more fruit** of better quality. By increasing the mineral content of citrus fruit, he likewise improved its texture, its appearance and its flavor.

Life Depends on Quality Minerals. He experimented with a variety of growing things, and in every case the outcome was the same. By mineralizing the feed at poultry farms, he got more and **better eggs**; by balancing pasture soils, he produced **richer milk**. Persistently he hammered home to farmers, to doctors, and to the general public the concept that **life depends upon the minerals.**

DR. CAREY REAMS AND THE REFRACTOMETER

In the early 1970's, Dr. Reams, with refractometer in hand, walked into the office of ACRES USA (an organization that promotes eco-farming) and placed a simple chart on the editor's desk. That chart correlated brix numbers with four general quality levels for most fruits and vegetables. This chart has now been copied innumerable times, and it has made its way around the world over and over.

You can easily get a drop of juice from most soft fruits, but some vegetables require a garlic press. Extreme cases require crushing pliers --- and rarely --- a blender. A simple refractometer allows you to do the following:

- YOU, not a laboratory scientist, can test the food you buy.
- YOU can determine QUALITY before you buy.
- YOU can gain back a control over what types of food you eat.

Please take readings immediately after getting the drop of juice. If the juice dries on the prism, it may give a false reading. Also be wary when testing dehydrated produce. The dry-

ing of a drop, or an entire fruit, can create a false high reading.

However, only HIGH QUALITY produce high quality dehydrates. HIGH BRIX produce ADAMANTLY **RESISTS ROTTING IN STORAGE!** Check this yourself by testing and storing HIGH-BRIX fruit or other produce on a counter for a period time.

The typical consumer has been conditioned to expect fruits and vegetables to decompose but high-brix food will NOT rot in storage. Now you can enter the **poor-food-rots / good-food-doesn't** paradigm and begin to test everything for yourself.

The REAMS Composite Chart

The following chart called the "Reams Composite," was compiled from five sources:

ACRES, USA, an Ecological farming newspaper; edited by Fred & Charles Walters

The Anatomy of Life and Energy in Agriculture by Dr. Arden Andersen, D.O., Ph.D.

Nourishment, Home Grown, by Dr. A. F. Beddoe, DDS

Mainline Farming for Century 21 by Dr. Dan Skow, D.V.M.

How to Grow Great Alfalfa and Other Forages by Dr. Harold Willis, Ph.D.

This chart has extensions to show certain brix levels conferring plant immunity from insect, bacterial, fungal, or viral attack. The theory (field-proven, time and again) is that healthy plants are almost always spared pest attack.

Researchers credit Dr. Reams with originating the BRIX = QUALITY concept (i.e. low brix = poor quality; high brix = high quality).

A careful taster will notice that produce rated "excellent" by on the chart has truly outstanding taste and flavor with rare exceptions.

One error by Reams appears to be in his chart value for "sweet cherries." One Washington State cherry grower chuckled at Reams' "16 = excellent" rating for cherries and said, "I won't harvest my Bings until I see 25 brix."

(See next page for chart)

Brix Chart: Determining the Best Produce

REAMS Composite Chart

How to use this chart: Place a drop of juice (fruit or vegetable) on the refractometer plate. Read the brix level through the eyepiece. Match the number to the chart to find the rating.

P=Poor A=Average G=Good E=Excellent DF=Disease Free

PRODUCE	P	A	G	E	DF	PRODUCE	P	A	G	E	DF
Apple	6	10	14	18	(16)	Mangoes	4	6	10	14	-
Asparagus	2	4	6	12	-	Onions	4	6	8	13	(13)
Avocados	4	6	8	12	-	Oranges	6	10	16	20	-
Bananas	8	10	12	16	-	Papaya	6	10	18	22	-
Beets	6	8	10	12	-	Parsley	4	6	8	12	-
Blueberry	6	8	12	14	-	Pea, blackeye	4	6	10	12	-
Broccoli	6	8	10	12	-	Pea, English	8	10	12	14	(14)
Cabbage	6	8	10	12	-	Peaches	6	10	14	18	-
Cantalope	8	12	14	16	(16)	Peanuts	4	6	8	12	-
Carrots	4	6	12	18	-	Pears	6	10	12	14	-
Casaba	8	10	12	14	(16)	Pepper, hot	4	6	8	12	(12)
Cauliflower	4	6	8	12	-	Pineapple	12	14	20	22	-
Celery	4	6	10	12	(15)	Potato, Irish	3	-	-	13	(13)
Cherry, sour	-	-	-	-	(14)	Potato, sweet	6	8	10	14	-
Cherry, sweet	6	8	14	16	(16)	Pumpkin	-	-	-	(15)	-
Coconut	8	10	12	14	-	Raisins	60	70	75	90	-
Corn, sweet	6	10	18	24	(24)	Raspberry	6	8	12	14	(15)
Cucumber	-	-	-	-	(13)	Romaine Lettuce	4	6	8	12	-
Kumquat	4	6	8	12	-	Rutabaga	4	6	10	12	-
Eggplant	-	-	-	-	(12)	Squash	6	8	12	14	(15)
Endive	4	6	8	12	-	Strawberry	6	10	14	16	(16)
Escarole	4	6	8	12	-	Tomato	4	6	8	12	(18)
Garlic	-	-	-	-	-	Turnips	4	6	8	12	-
Grapefruit	6	10	14	18	-	Watermelon	8	12	14	16	-
Grapes	8	12	16	20	-	- growers -					
Green Beans	4	6	8	14	(14)	Alfalfa	4	8	16	22	(14)
Honeydew	8	10	12	14	(16)	Corn, stalks	4	8	14	20	-
Kohlrabi	6	8	10	12	-	Corn, young	6	10	18	24	-
Lemons	4	6	8	12	-	Grains	6	10	14	18	-
Lettuce	4	6	8	12	(12)	Roses	-	-	-	(15)	-
Limes	4	6	10	12	-	Sorghum	6	10	22	30	-

() = level at which no disease or insect will infest the plant

GENERAL NOTES for the CHART

● **“Disease-free” figures** are indicated in **parentheses**; this means that this figure is the **plant brix readings at which (or above) no disease or insects will infest the plant.**

Although they were unfamiliar with refractometers, this high level of plant resistance was the great secret that such men as **Sir Albert Howard and J. I. Rodale** inherently knew.

It is possible to have values higher than “excellent” (as shown by various readings). More than likely, in the future, we may need to indicate a “+” by the “*excellent*” values as higher upper limits are discovered. The highest values are not now known. For example, one man once found **28 brix strawberries** that were grown in Virginia.

As a general rule of thumb, **12 brix or better readings confer reasonable plant pest and disease immunity.** This is true of both fruit and leaf readings.

Blank Spaces on chart: Unknown (unmarked) values are still being researched.

- If you garden, or farm, care about **QUALITY**, and want **POISON FREE** food, you will find brix values essential. Maintaining **HIGH BRIX** values frees you from spraying toxic substances.

Note: You may sometimes find that you have to use a **leaf** (where the leaf is not the plant part you eat) to get your test drop. While this may help you determine the better of two plants, the majority of data in the quality charts refers to the **eaten part.**

In nature, the plant has a most essential goal: to reproduce. However, it is obvious that the plant must survive to maturity if it is to achieve that goal. In an ideal world, the plant would develop 12 or better brix in its leaves. This means better plant nutrition that is also in the roots and shared with the healthy bacteria growing in the root rhizosphere. The bacteria, using this gift of energy, “bloom” profusely and create many substances from soil minerals -- substances critical for the plant to complete its life cycle.

Later, assuming the plant was successful in defending itself against pests and disease, it will start maturing the parts needed for its primary directive: reproduction. In other words, say, any apple tree will proceed to produce the very best apple that it can. The best tasting apple is the fruit most likely to be selected by an apple lover. Of course, the apple lover also takes the seed that is inside the apple---always with the possibility that those seeds may possibly be planted elsewhere.

Many scientific growers are adopting the Pike Agri-Lab Tissue Test methods where great attention is paid to maintaining **leaf values at 12 (or better) brix.** The sap translocation process is well understood. It has been proven that the ripened fruit on a plant with high leaf brix values can

reach **20 or more brix.**

The growing of plants is a dynamic process. Plants that are deficient in one or more minerals needed for optimum health can generate excessive brix in their leaves but may be blocked from translocating this nutrition to the roots and stems. For instance, a 25+ brix value in blueberry leaves has been recorded, but the fruit ultimately only reached only 12 brix. Although these values are high, we can readily recognize that optimum conditions were not prevailing.

Sadly, some modern **hybrid plants** (such as **sweet corn**) have been bred to excessively translocate sugar. They can give high brix corn ear readings even though the stalks and leaves have relatively low readings.

You will find that **pest problems will tend to persist until you achieve higher leaf and stalk brix readings - the target is always 12+ brix.** This knowledge is invaluable for gardeners and farmers to monitor their plant quality in early growth stages.

Don't Give Up

If when you first begin your garden and find that brix levels indicate less than high quality – **don't give up.** Instead, be happy that **YOU** now have the knowledge needed to inspire you to grow higher and higher quality fruits and vegetables. Learn how to compost, use natural fertilizers and increase the fertility of your soil.

Please let the refractometer guide you toward better food – within reason. For instance, if you learn that you have unknowingly used poor grade spinach for your salads in the past, now you may want to look for sources that are at least average or good spinach -- with the goal of finding excellent spinach at some future time (i.e. very hard to find!).

A FEW MORE NOTES

- You may test spicy or pungent foods (such as onions or hot peppers) for **HIGH QUALITY** using the refractometer, just the same as any other foods.
- The refractometer is not truly a ripeness tester, although it is used in that sense by many Departments of Agriculture. For instance, many Departments allow cantaloupe to be picked once it tests 9 brix (poor quality – often what you'll find at salad bars in restaurants). However, excellent cantaloupe is at least 16 brix or better.
- Produce **CANNOT** increase minerals (and therefore increase the **QUALITY**) after the produce has been detached from the mother plant or the soil.
- Ignore vendor's comments about picked produce somehow ripening into better quality once it is off the plant. Nonsense! Particularly ignore vendor's signs reading “**SWEET**”. You now have the means, by using a refractometer, of determining true quality.

Taste, Flavor & Superior Nutrition

You will soon rediscover that good tasting food is more satisfying than everyday fare. You will quickly learn that HIGH BRIX food tastes the most wonderful – with associated healthy benefits. Interestingly, once you rediscover the great taste of high brix food, you may find the artificially chemicalized food intolerable.

Certainly, you will find it difficult to eat poorer quality fruits and vegetables as your taste sense is once again “recalibrated” to the HIGH quality and taste of higher brix produce.

The refractometer helps you select HIGHER QUALITY foods containing more vitamins and minerals. You will immediately begin to notice the direct relation between flavor and brix. The refractometer will quickly help you regain your ability to select good food by taste alone. This re-developed skill can serve you well at both a restaurant and the supermarket.

A high brix item of a certain type of produce is better tasting than a low brix item of the same produce. However, people prefer different types of tastes. For instance, some people prefer tart apples and some like sweet varieties. An excellent quality Winesap apple, while wonderful to some eaters, may be too tart for those who like Red Delicious.

THE STAGES OF TESTING

Are you amazed to know that all Departments of Agriculture use refractometers? All food companies that process either liquid or paste foods use refractometers. All agricultural buyers are familiar with refractometers. Now you can use one to assess food quality yourself – without relying on others.

1. FIRST, CALIBRATE YOUR INSTRUMENT

- Place a drop of distilled water on the prism and flip the plate down (if you have a plate model). Flip the hinged prism shut if you have a double prism model.
- View through the instrument toward a light source (a clear sky is best).
- Adjust the focusing ring until you see a razor sharp image of the brix scale. The demarcation line where the light and dark fields meet should CROSS at ZERO.
- ATC models (Automatic Temperature compensated) are calibrated with the adjustment screw to read ZERO. This adjustment is rarely needed. Standard (non-ATC) models may require temperature correction. Anyone needing the full version of the abbreviated sidebar chart should write or call.

Abbreviated International Temperature Correction Table for a Refractometer Tested at 20 degrees C.

Temp C	Temp F	Dry Substance Content in Percent				
		0	5	10	15	20
10	50	Subtract .50 Brix	Subtract .54 Brix	Subtract .58 Brix	Subtract .61 Brix	Subtract .64 Brix
15	59	Subtract .27 Brix	Subtract .29 Brix	Subtract .31 Brix	Subtract .33 Brix	Subtract .34 Brix
20	68	<none required @ 20C/68F degrees>				
25	77	Add .33 Brix	Add .35 Brix	Add .36 Brix	Add .37 Brix	Add .38 Brix
30	86	Add .72 Brix	Add .74 Brix	Add .77 Brix	Add .78 Brix	Add .79 Brix

- Please understand that temperature compensation is simply not needed if you are only trying to select more nutritious food and the comparison tests are conducted at the same temperature. For instance, a glance at the chart shows that testing, say, a 15 brix carrot on a hot day would require adding less than a single brix to make full correction.

2. RUN A TEST

- Select a soft fruit from your refrigerator or fruit bowl and squeeze a drop from it onto the prism.
- Flatten the drop with the prism.
- Hold it to the light.
- THE READING IS EXACT! (many instruments read to 0.2 brix)

3. Reprogram your mind and palate to think “Quality”

- Determine QUALITY by comparing the reading to the Reams Composite Chart.
- Taste the fruit.
- Immediately begin to re-learn that taste is as important as all other senses.
- Rediscover that taste is far more important than simple appearance for selecting QUALITY produce.
- Test, then taste, your vegetables (a garlic press can be useful for squeezing a drop of juice).
- Resolve to buy only QUALITY fruits & vegetables – as much as possible.

3. PROGRESS TO TESTING AT A PRODUCE STAND OR MARKET

Don't be discouraged -- be warned that 90% of produce on retail produce will test POOR or AVERAGE.

- Of course, you should offer to pay for the sample in a store. If you have rapport with the owner, you can ask if you can test the produce in their presence.
- You are a buyer. You should have the right to select your purchases by means other than simple appearance.
- Many consumers are conditioned to buy once they take a sample. Let the refractometer guide you to a "Thanks, but no thanks" when it indicates "poor" or "average" produce.

Avoid judging or labelling someone's produce as "poor" or "Average". Simply tell the seller that you are looking for "higher sugar content." Fruit stand sellers have feelings, too. Showing the seller the brix values may help open channels for them to grow BETTER fruits & vegetables. Yes, you want this person interested in your special needs.

Let the seller examine your refractometer if they wish. Let them verify your readings. Ask how they select what they buy at the wholesale market. Many operators will be fascinated with your refractometer. Some may offer to buy it. They may quickly grasp how it could help them get better produce at the wholesale markets where they buy.

Don't be surprised if a stranger notices you testing and asks what you are doing. Feel glad to explain what you are doing.

AT THE GROCERY STORE

- Ask for the produce manager.
- Tell him the information you want and what you wish to do. Offer to share the information you obtain.
- Grocery stores have a satisfaction guarantee. Suggest to them that you are trying to get satisfaction at the store instead of waiting until you get home.
- Do be courteous and not disturb other customers in the store.

THE STAGES OF TESTING

FOR THE GARDENER OR FARMER

1. IN THE FIELD

Start by testing your finished produce when it is ready for harvest. Recognize that HIGH QUALITY produce comes from HIGH QUALITY plants. Test the leaves of your plants that are not yet ready for harvest. If they continually test high as the days go by, the harvest will ultimately test high.

Start your testing earlier next season. Then you are no longer operating blindly. Adjust your fertilization to increase leaf brix. The QUALITY of your produce will be far higher. There is an excellent step-by-step program using pH & electrical conductivity to adjust leaf brix upwards. This method removes much of the traditional guesswork that formerly dominated the "try this---try that" school of how to increase brix.

2. OBSERVE THAT INSECTS, VIRUS, BACTERIA, AND FUNGUS ONLY ATTACK LOW BRUX PLANTS

Chemical control of plant pests is a multi-billion dollar industry. Each year, chemical/pesticide companies spend hundreds of millions of dollars advertising their products purportedly to control insects, viruses, bacteria, and fungus. The chemical companies spend more millions conducting and sponsoring field tests that attempt to prove the special worth of their particular products.

However, their tests assume that all pests voraciously attack all green plants. This is a false premise. You must ask the following questions:

What kept pests from multiplying, and then devouring, everything green millions of years ago? Why is the Earth not a bare rock now?

Understandably, the chemical companies avoid these questions. Most are well aware that many pest problems occur in fields fertilized with NPK (synthetic fertilizers).

The true answer is that pests are extremely selective in what they eat. Selectivity is a well known phenomena. For instance, a cabbageworm dropped in a ncornfield starves to death in the midst of plenty. Similarly, corn-smut fungus spores landing in a cabbage patch also die.

HIGH-QUALITY organic growers have, for generations, found that pests simply leave their produce alone. However, the truth of their observations is often clouded by the pests that attack LOW-QUALITY organic growers who try to battle them with garlic sprays and other concoctions.

Simply stated, unhealthy plants attract pests.

3. HIGH LEAF BRUX READINGS PROTECT AGAINST FROST

Pure water freezes at 32 degrees Fahrenheit. However, a 5 brix water-sugar mixture freezes at 26 degrees; a 10 brix mixture at 22 degrees; and a 15 brix mixture won't freeze until it reaches 17 degrees. Plant frost damage (killing) occurs when ice crystals rupture plant cells. Many HIGH BRUX growers find their production season extended because the first few light frosts no longer harm their crop.

While a sugar-water mixture is not exactly the same as brix, consumers would be wise to recognize that the last local field-

grown produce is almost assuredly the highest brix and therefore the highest quality. Such growers are worth seeking out.

Note: Some refractometer models are calibrated to directly show the temperatures needed to freeze certain liquids.

4. Price your produce accordingly

Once you understand that your produce is sweeter and more nutritious than average, you should be prepared to show your customers why it is worth more.

DEHYDRATION

A drop of plant juice starts drying immediately. Wind and sun speed the drying. If you suspect that your test drop dried enough to affect your result, clean your refractometer and start over.

Re-check. Re-check most tests when you first start using your own refractometer. The ability to duplicate your work by crosschecking is a powerful confidence builder.

Fading. Be alert for fading of the demarcation line in the viewing screen. **Fading means the sample is drying** on the prism. Do not confuse this with fuzziness or blurring of the demarcation line. You may want to gain experience at spotting fading with your refractometer. Place the smallest drop on the prism that will give a demarcation line. Then examine the screen for a minute or so. Fading should occur fairly soon as the moisture evaporates.

Dehydration. Dehydration is necessary when preparing certain foods. For instance, you must remove many gallons of water from maple sap to make a gallon of maple syrup. Use of a refractometer could determine in advance exactly how many gallons to evaporate by checking the brix of the fresh sap. Using a refractometer allows you to know that raw sap with HIGH BRIX produces far better, tastier, and more abundant syrup.

Rotting. Stored fruit and vegetables either rot or dehydrate. Rotting in storage is an unmistakable sign of poor quality. Dehydration is an absolute sign of HIGH QUALITY. Sellers of low-quality fruits and vegetables will resist this fact forever. Many consumers are confused on this point because they have been conditioned to cut off rotting portions of a fruit or vegetable and eat the remainder.

Remember, testing the juice from a dehydrated item of produce can be misleading. Your refractometer may indicate a higher than true brix. While seldom a problem when selecting foods, checking leaf tissues in a field of heat-stressed plants can result in erroneous readings. Avoid using a refractometer to check a plant with **lack of turgor - i.e., droopy leaves**. Even when drought is not apparent, it is best to **check leaves as early in the morning as possible**.

ADVANCED USE (if blurry lines occur)

A less-than-sharp demarcation line (**blurry/fuzzy/diffused**) on the screen can be an indication of varied atom distribution - i.e., an **excellent mixture of minerals**. For instance, many veteran refractometer users grow forages for animals and also have access to standard lab tests (so as to make possible direct comparisons of brix vis-à-vis other lab tests). They insist that a **sharp demarcation** is an indication of **increased simple sugars** and therefore **lesser high-quality protein** (and other life-enhancing substances) at any given brix level.

Conversely, they suggest a **blurry/fuzzy line predicts more, and better quality, proteins (*)**. It is suggested that you think of your readings as, say, 12S (sharp) or perhaps 14D (diffuse). In almost all cases, **“blurry”-brix foods taste better**.

- You will easily learn to judge the mid-point of any blur ring. Your correct reading lies there.
- Blue intensity matters on those models that have a blue background field. When different items reveal the same brix but one has a **less intense blue**, it will **taste sweeter and be higher in calcium, which neutralizes acids**. However, the blue background can be overcast by the deep green chlorophyll color of some leafy plants. Do not be discouraged if your field of view appears to **“green-out.”** Simply rotate your body away from the light source and watch for the demarcation as the light intensity diminishes.

Although your mouth readily tells the difference, the refractometer cannot easily distinguish **starch from sugar**. Additional calculations may be needed to convert starchy food readings to sugar equivalents.

Some produce resists efforts to get a drop of juice for testing:

- The juice may have a very high brix and the juice may be very thick.
- Try cutting a very thin slice (1/16” to lay on the prism -- it really works!)
- Crush a leaf and lay that on the prism
- Grind the food in a processor and squeeze the chopped result.
- Be wary of dehydrated produce.

Some foods are made to order for testing:

- Plunge the prism end of the refractometer into citrus fruits. Then pull the instrument back and flip the plate down to get the reading. (The plunge method works well on other very ripe fruits and any tomatoes).

(*) Protein *quality* is a subject of great interest to farmers. Corn grown with ordinary N-P-K technology has “funny” un-

natural proteins. These *malformed proteins* appear when too much nitrogen in the form of N-P-K is applied to the growing crop. Much money is spent on “research” to discover ways of using yet more chemical additives to keep poor quality food from decomposing on supermarket shelves. However, the real answer is well-grown foods with high brix levels.

CARE & CLEANING

Refractometers require little, if any, special care. Normal wind, rain, cold, or heat will not damage them. (However, you should remember that temperature extremes might require using the correction chart).

- Clean off plant juices with a moist paper towel after use (avoid grit or sand).
- Avoid dropping the instrument -- but accidents do happen. Check the calibration and continue using the instrument if there is no physical damage. Physical damage requires a return to the factory.

Note: you can purchase prepared standard calibration liquids if your work requires extreme accuracy.

OTHER REFRACTOMETER USES

Specially calibrated hand refractometers are available to test other than 0-32 brix. For instance...

- Freezing point of anti-freeze mixtures...
- Saline concentration...
- Urinalysis
- Detecting illegal wrestler dehydration...
- Blood protein testing...
- Drug tampering...
- Jelly & jam production...
- Honey quality...
- Aquarium setup...
- Jet fuel quality and contamination...
- Aquaculture...

With practice, a standard brix refractometer can be used to accurately test or help duplicate many aqueous solutions.

Example: some farmers buy barrels of 35% hydrogen peroxide to spray on their crops to raise brix levels. 35% H2O2, itself tests about 17 brix when fresh. However H2O2 gradually breaks down to water in storage. A farmer can check with a refractometer and determine if he is getting what he is paying for.

Example: drug store 3% hydrogen peroxide tests 1.5 brix when fresh. It is an easy matter to dilute 35% concentrate down to 3% by adding distilled water to reach an identical reading.

FAMILIES OF FRUITS & VEGETABLES

BRIX=QUALITY charts are not 100% complete nor finished. New researchers will establish new values for unlisted produce. New farmers will re-discover long lost methods to grow higher quality produce. New agronomists will debate among themselves over the merit of a single degree brix.

In the interim, the home tester using a brix chart must sometimes substitute the value of a closely related item of produce. For instance:

- KALE, COLLARDS, and BRUSSELS SPROUTS are not normally listed. However, all three belong to the family BRASSICA, along with CABBAGE, and KOHLRABI.
- BLACKBERRIES are not listed, but RASPBERRIES are. The two are similar. Most people testing a blackberry use the raspberry values
- TOMATOES, EGGPLANT, POTATOES, and PEPPERS are from the NIGHTSHADE family.
- EGGPLANT, another nightshade, seldom has a listed value, but its relatives such as peppers, tomatoes, and potatoes do. You can generally interpolate a needed value.
- Where is DURIAN? PERSIMMON? ASIAN PEAR? ETHNIC PRODUCE? SPINACH? -- and other lesser known fruits.

FRESH VERSUS PASTEURIZED FRUIT JUICES

“Fresh” juice does not mean High Quality produce. Sorry, but poor quality juice is poor quality juice. Fresh HIGH QUALITY juice is HIGH QUALITY JUICE. While processing can damage vitamins, it ordinarily neither removes nor adds minerals. However, many processed juices have sugar added in an attempt to enhance taste. The **added sugar prevents accurate brix quality testing** even as it degrades the taste. Read the labels.

MISCELLANEOUS SIGNS OF HIGH QUALITY

- CITRUS: A thinner rind indicates HIGHER QUALITY
- CITRUS: Top quality citrus has five points at the calyx (stem end).
- PEARS: A boxy shape is better.
- STONE FRUITS: A split pit indicates poor quality and mineral insufficiency.
- GRAINS: Dry grain QUALITY is relative to unit weight, i.e., if you weighed bushels of 2 equally dry wheats, the heavier bushel is HIGHER QUALITY. For instance, top quality wheat from mineral-rich soil can be 70+ pounds per bushel. On the other hand, mineral poor wheat can be

as little as 60 or less pounds per bushel. The grain elevators pay meaningful premiums when they can find higher quality wheat or other grains.

- **JUICES: HIGH BRIX** juice will not taste watery.
- **VEGETABLES:** A natural waxy coating is good. Packers, processors, and stores try to duplicate this effect by mechanically waxing poor quality vegetables.
- **VEGETABLES:** Any hollowness indicates a mineral deficiency (often boron).
- **POTATOES:** Sunken eyes signify lower quality (often low in manganese).
- **MATURING GRAIN FIELDS:** A golden color is often the most desired.
- **ANY ITEM:** Bright pure color (natural color), whether in cut flowers or cut watermelons suggests higher quality.
- **ANY ITEM:** Slime or mold can be washed off the surface, but it may have grown into the item. Reject such food. Remember that high brix produce will not rot in storage, therefore rotting in storage is a sign of poor quality.

Getting Started

When you start using a refractometer, you may think that identifying HIGH QUALITY food could not be so simple. But it really is that simple. For instance...

- You will put back the watery, tasteless, low brix tomato.
- You will smile at the vendor's "pretty" string beans but ask when he expects to get good tasting beans.
- You will insist on a small sample of melon or pineapple...or forgo buying, because you are tired of low quality fruits.
- You may sometimes buy marked-down items because your test proved them HIGHER QUALITY than the 'picture pretty' produce. You will begin to expect HIGH QUALITY produce and you will start getting HIGH QUALITY produce.
- You will get HIGH QUALITY produce because you can identify HIGH QUALITY produce.

Some store product buyers actually have each vendor give them a drop of juice to test. So now you can teach your children---and their children---how to select high quality food.

No one will have to convince you that you are providing you and your family with superior nutrition. Because now you will know for sure.

Are you serious about this "won't rot in storage" talk?

Yes! We've all endured commercial "food" that quickly rots in storage (i.e. our refrigerator or pantries) for so long that we now think that produce is supposed to rapidly decompose. To test this, put some raw high brix food (such as an apple or potato) on a windowsill, then wait to see what happens.

Wow! What a revelation you will have. As the days go on, you will see potatoes, peppers, oranges, even lettuces simply shrivel up as they dry.

When we did this with a high brix tomato (which we grew ourselves), it slowly dehydrated over several months – not rotting at all – left out on our counter at room temperature! We were amazed.

SAVING MONEY

An ancient proverb insists that the pleasure of purchasing QUALITY produce persists long after any difference in initial cost is forgotten. Can you remember a scrumptious peach of 18 brix – more than the usual poor quality fruit in most stores? If the purpose of buying food is to get the nutrition needed to create bodies, then buying **more brix per dollar** represents the wisest possible savings.

At first, you may wonder if your family will consume much more of better tasting, more highly mineralized (HIGHER QUALITY) fruits and veggies when you find them. However, it doesn't work that way. Once your body catches up on needed minerals and nutrients, it will quit demanding huge amounts of nutritionless foods. You will be surprised that many people report consuming far less food and becoming fully satisfied much sooner and on smaller amounts of food.

Progressive dentists know that the higher mineral content of higher quality fruits and vegetables leads to healthier teeth and gums. That wonderful classic, "NUTRITION and PHYSICAL DEGENERATION" by Dr. Weston Price (available from Price-Pottenger Nutrition Foundation) makes a strong case that highly mineralized food can help prevent ANY tooth or gum problems (if started soon enough).

So you can save money by first identifying, then buying and eating HIGH QUALITY food only as follows:

- You may avoid many types of doctor bills.
- Your dental checkups could become checkups only – not drilling.

- You could learn too avoid buying poor quality food (that rots quickly) so you have to soon throw out.
- Your meals may shift away from high-priced commercial, chemicalized food and return to more wholesome basic fruits and vegetables.
- You may find you purchase and eat less total amounts of food because your body's hidden hunger for missing natural vitamins and minerals lessens as you obtain HIGHER QUALITY food.